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“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक

पेट्रोलियम उद्योग – शब्दावली

भाग 1 कच्ची सामग्री और उत्पाद

(पहला पुनरीक्षण)

Indian Standard

PETROLEUM INDUSTRY — TERMINOLOGY

PART 1 RAW MATERIALS AND PRODUCTS

(First Revision)

ICS 10.040.75; 75.080

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BUREAU OF INDIAN STANDARDS
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Petroleum Products Sectional Committee, PCD 3

FOREWORD

This Indian Standard (Part 1) (First Revision) which is identical with ISO 1998-1 : 1998 'Petroleum industry — Terminology — Part 1 : Raw materials and products' issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendation of Petroleum Products Sectional Committee and approval of the Petroleum, Coal and Related Products Division Council.

This standard was first published in 1968 with a view to eliminate the ambiguity arising from different interpretations of terms used in petroleum trade and industry and to establish a generally recognized terms. Since the industry has progressed manifolds over the years, need was felt to bring in newer terms. The Committee, therefore decided to revise this standard to completely align with ISO 1998-1 : 1998 under the dual numbering system. Accordingly, the title has been changed as 'Petroleum industry — Terminology : Part 1 Raw materials and products'.

It is envisaged to issue this standard in eight different parts, each dealing with a specific aspect. The other parts in this series are as under:

Part 2	Properties and tests
Part 3	Exploration and production
Part 4	Refining
Part 5	Transport, storage, distribution
Part 6	Measurement
Part 7	Miscellaneous terms
Part 8	General and index

The English version of the text of ISO standard has been retained without deviations for publication as Indian Standard. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.

b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

For tropical countries like India, the standard temperature and the relative humidity shall be taken as 27 ± 2°C and 65 ± 5 percent respectively.

Indian Standard

PETROLEUM INDUSTRY — TERMINOLOGY

PART 1 RAW MATERIALS AND PRODUCTS

(First Revision)

1 Scope

This part of ISO 1998 consists of a list of English terms, in use in the petroleum industry to indicate raw materials or petroleum products, together with the corresponding definitions in the two languages.

ISO 1998 is intended to cover the purposes of the part of the petroleum industry dealing with crude oils and petroleum products, that means all related operations arising from the production field to the final user. It is not intended to cover either petroleum equipment, or any operation in the field. However, some pieces of equipment or some operations of exploration and production are defined. The corresponding terms were introduced only when they appear in a definition of a product or process and when their definition was found necessary for understanding or for avoiding any ambiguity. Where a terminology of petroleum equipment is needed, it corresponds to the scope of ISO/TC 67, *Materials, equipment and offshore structures for petroleum and natural gas industries.*

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1998-99:—[1] *Petroleum industry—Terminology—Part 99: General and index.*

3 Term numbering

The general classification and numbering system used in ISO 1998 employs digits grouped in three categories:

x.yy.zzz

where

x is the part number of ISO 1998, in this case Part 1;

yy is the subcategory in which the term appears. Part 1 has 12 subcategories:

- 05 crude petroleum and feedstocks for refineries
- 15 gaseous products
- 20 light distillates and intermediary products
- 30 marine fuels
- 40 bitumen and related products
- 60 middle viscosity products, lubricants and related products
- 70 heavy distillates and residues
- 75 paraffins and related products
- 80 solid and semi-solid products
- 90 additives
- 95 miscellaneous
- 99 acronyms

zzz is the serial number of the individual term.

4 Index

See ISO 1998-99.

5 Order of listing

Terms are listed in serial number order.

1.05 Crude petroleum and feedstocks for refineries

1.05.000
petroleum
material consisting of, or derived from, a mixture

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[1] To be published.

of liquid or semi-solid organic compounds, principally hydrocarbons

1.05.005
crude oil
naturally occurring form of petroleum, mainly occurring in a porous underground formation such as sandstone

1.05.010
paraffinic crude
crude oil consisting essentially of paraffinic hydrocarbons and aromatic and naphthenic ring compounds with paraffinic side chains

NOTE Such crude may contain a high proportion of solid, waxy material at ambient temperature.

1.05.020
asphaltic crude
heavy crude oil containing a high proportion of asphaltenes, aromatics and naphthenes, and which yields a residue suitable for the manufacture of bitumens

1.05.030
naphthenic base crude
crude oil containing a substantial proportion of naphthenes (cycloparaffins) in some or all of the distillation fractions and residues

1.05.040
aromatic crude
crude oil with a higher content of aromatic hydrocarbons than is generally found

1.05.050
mixed crude
intermediate crude
crude oil whose atmospheric distillates contain a higher than normal proportion of aromatic compounds

1.05.060
sour crude
crude oil containing a significant amount of corrosive sulfur compounds

1.05.070
non-corrosive crude
sweet crude
crude oil having a low content of volatile sulfur compounds such as hydrogen sulfide and mercaptans

1.05.080
reduced crude
product obtained after removal, by atmospheric distillation, of the light components of crude oil

1.05.90
topped crude
long residue
crude oil which has been freed of gases, gasoline, kerosine and gas oil

1.05.100
feedstock
primary material introduced into a plant for processing

1.05.110
natural gas condensate
liquid fractions produced during cooling and pressure operations in the production of marketed natural gas

1.05.120
shale oil
mineral oil obtained by the pyrolysis of oil-shale

1.05.122
asphaltic sands
bituminous sands
oil sands
tar sands
sands impregnated with bitumen which can be extracted by a solvent

1.05.130
synthetic crude
liquid hydrocarbons suitable for use as feedstock to primary refinery processing units as a substitute for crude oil, which may include, or be totally composed of, liquids from non-petroleum origin.

1.05.150
slops
slop
slop oil
petroleum products that are contaminated or outside specification and require further treatment, reprocessing to make them suitable for use, or disposal

1.15 Gaseous products

1.15.001
natural gas
gaseous hydrocarbons (mainly methane) from

underground deposits, the production of which may be associated with that of crude petroleum

NOTE The gas is described as "wet" or "dry" according to the proportion of readily condensable hydrocarbons that it contains. This term also applies to the purified product.

1.15.005
liquefied natural gas
natural gas maintained in the liquid state by increasing pressure or lowering temperature, to facilitate its storage and transportation

1.15.010
dry gas
gas that is free from liquid components under the conditions of pressure and temperature at which it is obtained or intended for use

1.15.020
sour gas
gas containing organic sulfur compounds that has a tendency to corrode metal equipment with which it comes into contact under normal processing conditions

1.15.030
refinery gas
gas originating in the processing of crude petroleum or feedstocks and comprising principally hydrocarbons

1.15.040
tail gas
gas produced as a minor component during refinery processing and normally disposed of as fuel gas

1.15.050
bottled gas
liquefied petroleum gas stored under pressure in suitable containers

1.15.060
commercial butane
mixture of hydrocarbons consisting essentially of butanes and butenes

1.15.070
commercial propane
mixture of hydrocarbons consisting essentially of propane and propene

1.15.080
liquefied petroleum gas
mixture of light hydrocarbons, consisting predominately of propane, propene, butanes and butenes, that may be stored and handled in the liquid phase under moderate conditions of pressure and at ambient temperature

1.20 Light distillates and intermediate products

1.20.000
distillate
any product obtained by condensation of the vapours of a petroleum product when it is distilled under atmospheric pressure or under reduced pressure

NOTE In the first case, the product is called an atmospheric distillate and, in the second case, a vacuum distillate.

1.20.002
overhead
overhead product
most volatile fraction of the feedstock, which passes out of the top of a distillation column

1.20.003
atmospheric distillate
cf. **distillate** (1.20.000)

1.20.004
vacuum distillate
cf. **distillate** (1.20.000)

1.20.010
condensate
liquid product resulting from the condensation of a vapour

1.20.011
extract
solvent-soluble component obtained from a petroleum distillate in a liquid-liquid solvent extraction process

1.20.015
raffinate
solvent-insoluble component obtained from a petroleum distillate in a liquid-liquid solvent extraction process

1.20.020
alkylate
liquid hydrocarbon obtained from an alkylation process

1.20.030
light distillate
naphthas and gasolines boiling below 230°C at normal atmospheric pressure, and with a closed-cup flash point below ambient temperature

1.20.040
middle distillate
kerosines and gas oils boiling between approximately 150°C and 400°C at normal atmospheric pressure and having a closed-cup flash point above 38°C

1.20.050
lubricating oil distillate
cut having a distillation range and viscosity such that, after refining, it yields lubricating oil

1.20.060
heavy distillate
distillate boiling predominately above 350°C at normal atmospheric pressure, it includes the heaviest fractions from atmospheric distillation, together with the distillate fractions obtained by vacuum distillation

1.20.070
waxy distillate
distillate (normally vacuum) containing a relatively large amount of paraffin wax

1.20.080
cracked distillate
unrefined distillate produced by cracking (cf. 4.30.010, 4.30.020, 4.30.030, 4.30,040, 4.30.050 and 4.30.300)

1.20.101
special-boiling-point spirit
fraction of petroleum naphtha having a relatively narrow distillation range and special treated for particular applications

1.20.120
kerosine
distillate having a volatility intermediate between that of gasoline and gasoil, with a closed flash point above 38°C

1.20.121
domestic kerosine
kerosine designed for use on the domestic and commercial markets, generally for heating, lighting and cooking

1.20.122
aviation kerosine
kerosine designed for use in aviation gas turbines

cf. **kerosine-type jet fuel** (1.20.161)

1.20.130
gas-oil
fuel oil US
middle distillate fuel, which may contain some heavy distillate for specified applications

NOTE This distillate can be used to formulate **automotive gas-oil** (1.20.131), **heating gas-oils** (1.20.132) and **marine distillate fuels** (1.30.010)

1.20.131
automative gas-oil
diesel fuel
gas-oil that has been specially formulated for use in medium and high-speed diesel engines, mostly used in the transportation market

NOTE It is often referred to as "automotive diesel fuel".

1.20.132
heating gas-oil
gas-oil that has been formulated for use in domestic, commercial and industrial continuous-combustion applications

NOTE It is often referred to as "heating oil" or "distillate fuel oil".

1.20.140
natural gasoline
casing head gasoline
low-boiling liquid petroleum product extracted from natural gas

NOTE In its "wild" or unstabilized condition, it contains fairly high proportions of propane and butane. The removal of the propane yields a stabilized gasoline.

1.20.141
sweet gasoline
gasoline that contains negligible amounts of hydrogen sulfide and mercaptans and so gives a negative reaction in the doctor test.

cf. **doctor test** (2.10.140)

1.20.142
sour gasolines
gasoline fraction that contains mercaptans and or hydrogen sulfide in quality leading to a positive reaction in the doctor test.

cf. **doctor test** (2.10.140)

1.20.143
motor gasoline
gasoline US
petrol GB
gasoline with or without additives, notably antiknock agents and inhibitors, for use as a fuel in automobile, stationary and other spark-ignition engines, except aircraft engines

1.20.144
aviation gasoline
gasoline for use as a fuel in spark-ignition aviation engines and having a distillation range usually within the limits of 30 °C and 180 °C

1.20.145
straight-run gasoline
distillate fraction, normally boiling within the range 30 °C to 220 °C, obtained by the atmospheric distillation of crude petroleum

1.20.146
petroleum spirit
Stoddard solvent US
special-boiling-point spirit (1.20.101) commonly used in laboratory applications, having high volatility and low aromatics content

NOTE 1 The most commonly used grades have a boiling range of 40 °C to 60 °C or of 60 °C to 80 °C.

NOTE 2 Historically, petroleum spirit was also used to describe automotive **gasoline** (1.20.143).

1.20.150
straight-run product
virgin product
product obtained from crude oil by distillation without change to the structure of the component molecules

1.20.160
jet fuel
petroleum distillate used as a source of energy in systems of jet propulsion and by extension, fuel suitable for use in aircraft gas turbines

1.20.161
kerosine-type jet fuel
aviation gas turbine fuel having a distillation range which normally falls between 150°C and 300°C

1.20.162
high-flash-point jet fuel
aviation gas turbine fuel having a distillation range which normally falls between 175°C and 300°C and a closed flash point above 60°C

1.20.163
wide cut jet fuel
aviation fuel composed of kerosine and naphtha fractions, with a boiling range between 30°C and 300°C, and a closed flash point substantially below 38°C

1.20.170
white spirit
solvent of mineral origin, usually distilling between 130°C and 220°C

1.20.180
naphtha
light distillate containing no additive, having a distillation range similar to gasoline

1.20.190
petroleum ether
historical term, now designated as **petroleum spirit** (1.20.146)

1.20.200
benzine
used in some countries for straight-run gasoline, not to be confused with benzene

1.30 Marine fuels

1.30.000
marine fuel
petroleum fuel used for marine applications

NOTE There are two categories of marine fuels : **marine distillate fuels** (1.30.010) and **marine residual fuels** (1.30.020).

1.30.010
marine distillate fuels
gas oil and diesel fuel of petroleum origin meeting international limits on the flash point of fuels for marine use

NOTE The heavier grades may contain small amounts of residuum.

1.30.020
marine residual fuel
petroleum fuels containing residues of distillation processes that meet international limits on the flash point of fuels for marine use

1.30.030
bunker fuels
bunkers
liquid fuels for ships, usually heavy residual fuels

1.40 Bitumen and related products

1.40.000
bitumen
asphalt US
very viscous or nearly solid, virtually involatile, adhesive and waterproofing material derived from crude petroleum, or present in natural bitumen, which is completely or nearly completely soluble in toluene and completely soluble in carbon disulfide

NOTE In the USA, "asphalt" is used for "bitumen" whereas it is used in the UK for a bituminous mixture.

1.40.010
paving bitumen
bitumen used to coat mineral aggregate for use in the construction and maintenance of paved surfaces and hydraulic works

NOTE In Europe, the most-used grades of paving bitumen are defined by their needle penetration, up to a maximum value of 900 x 1/10 mm. Grades softer than this are classified by their viscosity.

1.40.011
soft grade bitumen
paving bitumen used in the manufacture of low stiffness asphalt

NOTE In Europe, grades of soft grade bitumen are defined by their viscosity at 60°C.

1.40.020
modified bitumen
bitumen whose rheological properties have been modified during manufacture by the use of chemical agents

NOTE In this context, "chemical agent" includes natural rubber, synthetic polymers, sulfur and certain organo-metallic compounds, but not oxygen or oxidation "catalysts", such as ferric chloride, phosphoric acid and phosphorus pentoxide. Fibres and inorganic powders ("fillers") are not considered to be bitumen modifiers. Modified bitumens may be employed "directly" or in the form of cut-backs or emulsions, or blended with, for example, natural bitumen.

1.40.021
polymer-modified bitumen
modified bitumen in which the modifier used is one or more organic polymers

1.40.030
industrial bitumen
bitumen used for purposes other than construction or maintenance of paved surfaces and hydraulic works

NOTE Some grades of bitumen are used in both paving and industrial applications, e.g. certain penetration-graded bitumens are used for industrial purposes such as in the manufacture of waterproofing membranes.

1.40.031
oxidized bitumen
blown bitumen
bitumen whose rheological properties have been substantially modified by reaction with air at elevated temperature, with or without catalyst

1.40.033
hard grade bitumen
bitumen possessing hard and brittle characteristics at ambient temperature

1.40.035
special bitumen
bitumen for which the process selected has conferred special properties which meet requirements for paving or industrial applications

1.40.040
cut-back bitumen
bitumen whose viscosity has been reduced by the addition of a relatively volatile flux

NOTE Typically, white spirit and kerosine are the petroleum fluxes employed.

1.40.050
fluxed bitumen
bitumen whose viscosity has been reduced by addition of a low volatility flux oil

NOTE A petroleum-fluxed bitumen is so called when the flux oil is of petroleum origin.

1.40.052
flux
fluid added to another to reduce its viscosity

NOTE This term embraces relatively volatile distillates used in the manufacture of cut-backs, to relatively involatile oil used in the manufacture of fluxed bitumens.

1.40.053
flux oil
relatively involatile oil used in the manufacture of fluxed bitumen

1.40.060
bitumen emulsion
dispersion of bitumen in an aqueous phase containing a surfactant

1.40.061
emulsifiable bitumen
bitumen suitable for manufacture of bitumen emulsion

cf. **bitumen emulsion** (1.40.060)

1.40.070
pigmentable bitumen
bitumen suitable for manufacture of coloured mixtures by the addition of pigment

1.40.100
natural bitumen
natural asphalt US
relatively hard bitumen which is virtually solid at 25°C, found in natural deposits, often mixed with fine or very fine mineral matter

1.40.250
binder
material serving to coat the particles of an aggregate and to assure its cohesion

1.40.260
hydrocarbon binder
generic term for an adhesive material containing bitumen or tar or both

NOTE This term is not scientifically precise, in that all of the materials covered by the term contain non-hydrocarbon components. However, the term has been proposed to allow the term "bituminous" to apply exclusively to non-pyrolysis material, i.e. bitumen.

1.40.270
bituminous binder
adhesive material containing bitumen

NOTE It may be in any of the following forms : unmodified, modified, oxidized, cut-back, fluxed, emulsified. To avoid uncertainty, whenever possible, the term describing the actual binder in question should be used.

1.40.300
tar
viscous, adhesive material produced by the pyrolysis of coal, lignite, wood, etc.

NOTE Unless otherwise stated, it is assumed that the origin is coal or similar material. It is never from petroleum origin.

1.40.301
tar pitch
residue obtained by distilling **tar** (1.40.300)

1.60 Middle viscosity products, lubricants and related products

1.60.000
base oil
oil, typically boiling in the range 390°C to 600°C, obtained from petroleum by refining, or of synthetic origin, serving as a base for finished lubricants, usually after the addition of additives

1.60.001
mineral oil
oil consisting of a mixture of hydrocarbons either occurring naturally or obtained by the treatment of materials of mineral origin

1.60.002
pale oil
trade name for a moderately refined base oil produced generally from a naphthenic crude having a pale amber colour

1.60.003
neutral oil
trade name covering a refined base oil from a paraffinic crude

1.60.004
bright stock
high viscosity solvent-refined base oil obtained by appropriate refining of a residue

1.60.005
cylinder stock
base oil of very high viscosity used as the base of lubricating oil for the cylinders of steam engines

cf. **cylinder oil** (1.60.160)

1.60.010
lubricating oil
oil, usually refined, primarily intended to reduce friction between moving surfaces

1.60.011
lubricant
any substance which, when interposed between two surfaces in relative motion, reduces friction or increases wear resistance

1.60.013
soluble oil
oil containing emulsifiers and capable of forming stable emulsions or colloidal suspensions in water, used particularly for lubrication and cooling in metal working operations

1.60.020
spindle oil
low viscosity lubricating oil intended for lubricating the lightly loaded parts of high rotation speed machines, originally the spindles of textile machines

1.60.030
machine oil
oil used for the lubrication of the lightly loaded moving parts of machines operating at moderate temperatures

1.60.040
steam turbine oil
highly refined petroleum oil usually containing additives, used for the lubrication of steam turbines and having, among other properties, that of resisting the formation of stable emulsions with water

1.60.050
motor oil
engine oil
lubricating oil used in internal combustion motor and other types of engines

1.60.051
detergent oil
lubricating oil, used normally in internal combustion engines (cf. 1.60.050), having the property of dispersing and of maintaining in suspension both products of deterioration and contaminants

NOTE This property results from the presence of suitable additives.

1.60.052
multigrade engine oil
engine oil which falls simultaneously into a low temperature SAE viscosity grade classification (number followed by the letter W) and a high temperature SAE viscosity number grade, provided that the two grade numbers are not identical or consecutive with a difference of at least 15

EXAMPLES

5W - 20

10 W - 30 or 10 W - 40

(but not 10 W - 20)

20 W - 40 or 20 W - 50

(but not 20 W - 20, or 20 W - 30)

NOTE The Society of Automative Engineers (SAE) has established four series of grade numbers, based on viscosity. Two of these series, one defined at low temperature and running from SAE 0 W (minimum viscosity) to SAE 25 W (maximum viscosity) and the other defined at high temperature and running from SAE 20 to SAE 50, are applied to engine oils. The other two series are applied to gear oils and do not form continuous series with the engine oil series. They run from SAE 70 W to SAE 85 W at low temperature and from SAE 90 to SAE 250 at 100°C in an analogous manner.

1.60.060
refrigerator oil
lubricating oil of low pour point used in refrigeration systems

NOTE Four certain types of compressor, compatibility, at low temperature, with refrigerant fluids is also an essential characteristic.

1.60.070
cutting oil
lubricating composition, emulsifiable or not, for lubricating and cooling metal-working tools and work-pieces

1.60.080
black oil
dark-coloured lubricating oil used in certain slow-moving machines.

NOTE In some countries, this term also covers residual fuel oils.

1.60.090
white oil
highly refined petroleum oil, derived from similar feedstocks as base oils or from base oils by further refining, that is practically colourless and very low in sulfur and aromatic compounds

1.60.091
liquid paraffin
medicinal oil
very highly refined petroleum oil, colourless,

odourless and tasteless, used in pharmaceutical preparations

1.60.092
spray oil
petroleum product of low viscosity, resembling a lubricating oil and used, alone or with other ingredients, for pest control in animal or vegetable husbandry

1.60.100
textile oil
batching oil
mineral oil used in the textile industry for lubricating fibres

1.60.110
quenching oil
oil used for controlled cooling of manufactured metallic pieces

1.60.120
preservative oil
oil used for temporarily coating metal parts in order to protect them against corrosion

NOTE It usually contains additives.

1.60.130
insulating oil
oil having good dielectric properties used in electrical equipment

1.60.131
cable oil
oil used for the insulation of electric power cables

NOTE 1 For impregnated paper-insulated cables of the "solid" type, hydrocarbon oils of high viscosity used either alone or blended with other materials.

cf. **cable compound** (1.60.132)

NOTE 2 For hollow-core "oil-filled" cables, low viscosity hydrocarbon oils or synthetic non-hydrocarbon fluids of suitable-characteristics.

1.60.132
cable compound
mixture of mineral oil and thickener (petrolatum, resins, polymers, bitumen, etc.) intended for the impregnation of the insulation of electric cables

1.60.140
benzole wash oil
benzole absorbing oil
oil used for removing light aromatic hydrocarbons from coal gas or from coke-oven gas

1.60.150
hydraulic fluid
fluid of petroleum or non-petroleum origin used in hydraulic systems for transmitting power and providing lubrication

1.60.151
damping fluid
liquid used in hydraulic damping devices, usually having a high viscosity index

1.60.160
cylinder oil
lubricating oil of high viscosity and high flash point primarily used for the lubrication of the cylinders and valves of steam engines

cf. **cylinder stock** (1.60.005)

1.60.170
extreme pressure lubricant
lubricating oils or greases which contain a substance or substances specifically introduced to prevent or reduce the effects of metal-to-metal contact in the operation of highly loaded gears and bearings, if necessary by reaction with the metal during friction conditions to form a protective film

1.60.180
used oil
in petroleum product recycling, oil whose characteristics have changed since being originally manufactured, and which is suitable for recycling

cf. **waste oil** (1.60.181)

1.60.181
waste oil
oils having characteristics making it unsuitable either for further use or for economic recycling

1.70 Heavy distillates and residues

1.70.010
black product
petroleum product containing residual components whose asphaltene content makes the product dark in colour

1.70.020
sour water
water which contains objectionable amounts of

dissolved contaiminants, e.g. hydrogen sulfide, ammonia, phenols, etc.

1.70.030
fuel-oil
heavy distillate, residue or mixture of the two, used as fuel for the production of heat or power

cf. **gas-oil** (1.20.130)

1.70.060
tempering oil
heavy oil of high flash point and high thermal stability used for tempering of metals

NOTE Tempering is a thermal treatment operation often following quenching, consisting of heating a metallic piece at a given temperature, below the austenitization temperature.

1.70.070
petroleum coke
blackish solid product consisting essentially of carbon, usually obtained by severe thermal degradation of petroleum-based feedstocks

1.70.110
bottoms
residue
product remaining after distillation of the lighter components from a mixture

1.70.120
atmospheric residue
residue from the atmospheric distillation of a crude oil

1.70.130
vacuum residue
residue from vacuum distillation, normally of an atmospheric residue

1.70.140
solvent-precipitated asphalt
asphaltic material of high molecular mass separated from vacuum residue by precipitation using a light hydrocarbon (usually liquid propane)

1.75 Paraffins and related products

1.75.000
paraffin wax
product obtained from distillates, consisting essentially of a mixture of saturated hydrocarbons, solid at ordinary temperatures

NOTE When fully refined, paraffin wax has a low oil content and a rather marked crystalline structure, without odour and taste.

1.75.010
microcystalline wax
product consisting essentially of a mixture of saturated hydrocarbons, solid at ordinary temperatures, having a finer crystalline structure than paraffin wax and a relatively low oil content

NOTE It is normally obtained from **slack wax** (1.75.040) produced during the refining of **bright stock** (1.60.004).

1.75.020
petrolatum
semi-solid product consisting essentially of **micro-crystalline wax** (1.75.010) associated with relatively large amounts of mineral oil.

1.75.030
tank bottom wax
wax that has settled from crude oil in storage tanks

1.75.040
slack wax
unrefined paraffin wax obtained by dewaxing waxy distillates, desasphalted oils or their raffinates, and containing a high proportion of oil

1.75.050
paraffin scale
incompletely de-oiled paraffin wax obtained from **slack wax** (1.75.040)

1.75.060
paraffin melt
blend of waxes with other constituents (usually in high concentration) such that it has a high viscosity when melted

NOTE It is applied in a molten state and is used for coating some types of piling to render them waterproof, or as an adhesive.

1.75.070
ozokerite
natural mineral wax, the constitution of which is similar to petroleum wax and which may contain mineral impurities

1.75.080
ceresin
originally refined ozokerite; the commercial product is nearly always mixed with petroleum wax

1.80 Solid and semi-solid products

1.80.000
lubricating grease
semi-solid to solid product consisting of a stabilized mixture of liquid lubricant with soaps or other thickeners, that may contain other additives imparting special properties.

1.80.010
soap grease
grease manufactured by dispersion in a base oil of a metallic-soap-type thickener

NOTE The soap of lithium, calcium, sodium and aluminium are the principal thickeners used in grease making.

1.80.020
non-soap grease
grease made by means of a thickening agent other than a soap

1.80.100
carbon black
substantially pure, finely divided amorphous carbon, usually produced from gaseous and liquid hydrocarbons by controlled combustion with restricted air supply so as to obtain incomplete combustion

1.90 Additives

1.90.001
additives
material added to another, usually in small amounts, to impart or enhance desirable properties or to suppress undesirable properties

1.90.002
detergent additive
additive for lubricants and fuels with a designed function of minimizing deposits in systems and engines

NOTE 1 Lubricating detergent additives are generally organo-metallic with an alkaline function to neutralize combustion acids.

NOTE 2 Fuel detergent additives are generally ash-free organic materials containing at least some polymer material.

1.90.003
dispersant additive
additive to a liquid lubricant or fuel which increases dispersion of insoluble impurities and stability of suspension, especially at low temperature

1.90.004
extreme pressure additive
chemical substance containing certain elements, such as sulfur, chlorine or phosphorus, that is added to lubricants used in applications where extreme pressures may occur between metal surfaces, in order to prevent excessive wear

1.90.010
thickener
product which, when mixed with a lubricating oil or grease, increases its viscosity or consistency

1.90.020
viscosity index improver
additive, usually a polymer, blended with a base oil to reduce the variation of its viscosity with temperature

1.90.021
pour point depressant
additive which lowers the pour point of a liquid petroleum product

1.90.030
blown oil
fatty oil, generally of vegetable origin, submitted to a controlled oxidation by heating and air blowing, to increase its viscosity

1.90.040
inhibitor
substance, naturally occurring or a synthetic additive, whose presence in small amounts in a petroleum product retards or prevents the occurrence of certain phenomena considered undesirable, e.g. gum formation in stored gasolines, corrosion in steam turbines

1.90.050
filler
inert solid matter, finely divided, added to a product in order to modify certain characteristics

1.90.060
filter aid
finely divided, porous, solid material used to improve the efficiency of filters

1.90.070
antifluorescence agent
material having the property of masking the **bloom** (2.10.092) of a petroleum product

1.90.080
plasticizer
product, generally of petroleum origin, used to facilitate the incorporation of various compounds into the base elastomer during the manufacture of rubbers

1.90.090
anti-detonant additive
anti-knock additive
additive, generally an organo-metallic compound, used in fuels for spark ignition engines which increases their resistance to knocking

1.90.100
gelling agent
product added to a lubricating oil in order to obtain a gel and thus confer thixotropic properties

1.95 Miscellaneous

1.95.001
thiol
mercaptan
compounds, containing the chemical grouping –SH, present in most crude oils and components from primary distillation

NOTE 1 The light mercaptans are volatile and have a distinct, unpleasant odour and are often used for this characteristic in the odorization of fuel gases for detection.

NOTE 2 In liquid products, light mercaptans are removed by hydroprocessing, or they are treated to convert them to the more inert disulfides. The most widely used treatment process for gasoline and kerosine components is the 'Merox' process.

1.95.002
napthtenic acid
organic acids that occur naturally in some crude oil, characterized by the presence of a naphthene ring and one or more carboxylic acid groups

NOTE Naphthenic acids are useful by-products used in the manufacture of paint driers, emulsifiers and soaps.

1.95.004
naphthenes
class of compounds occurring naturally in crude oils and comprising principally cycloparaffins, sometimes condensed with aromatic compounds

1.95.010
asphaltenes
high molecular mass, non-volatile constituents of crude oils and petroleum products containing residuum

NOTE They are of dark colour and contain a disproportionately high quantity of the sulfur, nitrogen and metals in the whole material. Composed essentially of aromatic and heterocyclic structures, they are insoluble in normal alkanes with five to seven carbon atoms but completely soluble in hot benzene or toluene.

1.95.020
maltenes
oil phase in which asphaltenes are dispersed, and which is soluble in normal alkanes with five to seven carbon atoms

1.95.030
biofuel
automotive, domestic, commercial or industrial fuel consisting partly or wholly of components from a renewable vegetable source

NOTE The major components are alcohols, ethers and esters of vegetable oils, although non-esterified vegetable oils have been used in some instances.

1.99 Acronyms

			See
1.99.001	LNG	liquified natural gas	1.15.005
1.99.003	LPG	liquified petroleum gas	1.15.080
1.99.005	SBP	special boiling point	1.20.101

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